

Supplemental Material

The Effects of Particulate Matter Sources on Daily Mortality: A Case-Crossover Study of Barcelona, Spain

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Source	Lag	IQR	PM2.5			PM10			
			OR	95% CI		IQR	OR	95% CI	
Secondary Sulfate/Organics	0	7.4	-0.5	-4.8	4.1	7.5	-1.3	-4.9	2.4
	1		-1.5	-5.1	2.2		-1.5	-5.9	3.1
	2		1.3	-2.5	5.3		-0.5	-4.3	3.4
	3		1.9	-2.5	6.5		-0.6	-4.4	3.4
Road Dust	0	1.8	-1.0	-4.9	3.0	5.9	-1.2	-5.8	3.6
	1		2.0	-2.4	6.7		3.0	-2.0	8.2
	2		4.2	1.5	7.0		1.7	-2.5	6.0
	3		1.2	-2.5	5.1		2.8	-0.6	6.3
Mineral	0	3.1	2.1	-0.3	4.6	8.2	0.1	-3.8	4.1
	1		1.5	-0.7	3.7		4.8	1.3	8.4
	2		4.1	1.5	6.7		5.3	0.3	10.7
	3		0.8	-1.4	3.0		2.1	-2.3	6.7
Fuel Oil Combustion	0	1.6	0.0	-3.4	3.5	1.7	-0.3	-3.5	3.1
	1		-1.1	-3.2	1.0		-0.1	-2.7	2.6
	2		2.1	0.1	4.2		1.1	-1.3	3.5
	3		-2.0	-4.0	0.1		-1.4	-3.6	0.9
Industrial	0	0.5	0.3	-1.6	2.1	0.7	-0.2	-2.2	1.8
	1		-0.1	-2.2	2.1		0.6	-1.9	3.1
	2		1.3	-1.2	3.8		0.1	-2.6	2.9
	3		-0.4	-2.9	2.2		-0.8	-3.5	2.0
Secondary Nitrate/ Organics	0	5.5	-1.1	-3.3	1.2	6.5	-3.2	-6.6	0.5
	1		0.2	-2.9	3.5		0.1	-4.4	4.9
	2		2.0	-0.1	4.1		1.9	-1.7	5.6
	3		1.0	-1.8	3.9		1.5	-1.9	5.1
Vehicle Exhaust	0	5.2	-1.1	-4.1	2.0	5.2	1.7	-1.2	4.8
	1		3.7	0.7	6.7		2.9	0.2	5.7
	2		3.3	0.4	6.3		3.6	0.1	7.2
	3		-1.6	-4.7	1.6		-1.0	-3.7	1.8
Aged Sea Salt	0	0.8	0.2	-2.0	2.4	4.0	-0.1	-4.9	5.0
	1		0.3	-2.6	3.3		-0.3	-4.6	4.2
	2		-0.8	-3.6	2.2		0.5	-3.3	4.4
	3		-1.9	-4.0	0.3		-3.0	-6.2	0.3
Traffic	0	9.7	-2.2	-5.4	1.2	11.0	-1.3	-5.3	2.8
	1		3.5	-2.4	9.6		3.3	-1.8	8.7
	2		5.6	1.8	9.5		3.9	0.0	8.1
	3		0.4	-4.0	5.0		1.6	-1.7	5.1
Multi-source: Mineral Fuel Oil Secondary Nitrate	2	3.1	3.7	1.3	6.2				
	2	1.6	2.0	-0.4	4.5				
	2	5.5	2.0	-0.3	4.3				
Multi-source# Mineral Traffic	2	3.1	3.4	1.0	5.8				
	2	9.7	5.0	1.3	8.8				
PM2.5/PM10 from species data set	0	13.0	0.9	-3.0	5.0	20.8	-0.5	-4.5	3.7
	1		1.2	-2.8	5.4		4.0	-0.2	8.4
	2		1.8	-1.3	5.0		3.6	-1.0	8.3
	3		0.5	-3.4	4.6		0.5	-3.8	5.0
PM2.5/PM10 every day	0	13.6	1.5	0.4	2.7	20.6	1.5	0.3	2.7
	1		1.9	0.8	3.1		2.4	1.2	3.6
	2		1.2	0.2	2.3		1.8	0.6	2.9
	3		0.1	-0.9	1.1		0.7	-0.4	1.8

Table 1. Excess risk for all-cause mortality (Central estimate and 95% Confidence Interval (CI) for interquartile range (IQR)); Bold = statistically significant at $p < 0.05$); #Stepwise regression model included traffic for potential selection

Source	Lag	IQR	PM2.5			PM10			
			OR	95% CI		IQR	OR	95% CI	
Secondary Sulfate/Organics	0	7.4	-0.9	-7.4	6.1	7.5	-1.3	-7.3	5.0
	1		5.6	-1.2	12.9		5.3	-1.4	12.4
	2		7.2	1.4	13.3		2.9	-3.3	9.4
	3		1.7	-4.8	8.7		-2.5	-9.6	5.3
Road Dust	0	1.8	-4.5	-11.0	2.5	5.9	-3.9	-11.4	4.2
	1		0.5	-6.7	8.3		3.5	-5.1	12.8
	2		6.7	2.4	11.3		3.5	-3.4	11.0
	3		0.0	-5.9	6.2		-0.6	-6.8	6.0
Mineral	0	3.1	5.2	1.1	9.4	8.2	0.8	-5.8	7.8
	1		2.7	-0.8	6.3		5.7	0.3	11.3
	2		6.6	2.1	11.2		6.4	-1.7	15.3
	3		1.6	-2.4	5.6		-0.1	-7.2	7.6
Fuel Oil Combustion	0	1.6	-4.4	-9.2	0.7	1.7	-2.8	-7.8	2.5
	1		0.6	-3.0	4.4		0.4	-3.0	4.0
	2		4.6	0.6	8.8		1.9	-2.1	6.1
	3		-0.6	-4.6	3.5		-0.2	-4.4	4.2
Industrial	0	0.5	2.3	-2.0	6.8	0.7	0.9	-2.7	4.6
	1		2.2	-1.3	5.8		2.6	-0.9	6.2
	2		2.4	-0.9	5.9		-0.6	-4.5	3.5
	3		-2.0	-6.0	2.2		-4.2	-8.7	0.6
Secondary Nitrate/Organics	0	5.5	-1.4	-4.8	2.2	6.5	-1.5	-6.9	4.3
	1		-0.3	-4.6	4.1		-1.1	-7.4	5.6
	2		5.0	1.1	9.0		5.1	-0.9	11.5
	3		0.7	-3.2	4.7		-0.4	-6.4	6.0
Vehicle Exhaust	0	5.2	-2.9	-7.9	2.3	5.2	3.6	-2.3	9.9
	1		2.8	-2.4	8.3		6.4	1.5	11.6
	2		4.0	-1.5	9.7		4.3	-1.0	9.9
	3		-1.9	-6.3	2.7		-4.9	-9.3	-0.3
Aged Sea Salt	0	0.8	1.1	-2.2	4.6	4.0	-1.7	-8.5	5.6
	1		0.7	-2.3	3.7		-1.0	-7.8	6.3
	2		-1.1	-4.5	2.4		4.4	-2.4	11.6
	3		-2.9	-6.2	0.6		-2.3	-8.1	3.9
Traffic	0	9.7	-4.6	-10.7	1.9	11.0	-0.6	-7.8	7.1
	1		1.8	-5.7	10.0		5.0	-3.3	14.0
	2		10.3	3.3	17.8		7.2	0.5	14.3
	3		-0.5	-5.6	4.8		-3.4	-9.0	2.5
Multi-source: Mineral Fuel Oil Comb Secondary Nitrate	2	3.1	6.7	2.5	11.1				
	2	1.6	3.6	-0.6	8.1				
	2	5.5	4.1	0.1	8.3				
Multi-source# Secondary Sulfate Mineral Traffic	2	7.4	7.7	0.8	15.0				
	2	3.1	5.6	1.4	10.0				
	2	9.7	8.1	1.4	15.2				
PM2.5/PM10 from species data set	0	13.0	-0.3	-6.3	6.1	20.8	-2.4	-9.5	5.2
	1		7.3	0.7	14.2		10.0	3.0	17.5
	2		4.3	-0.5	9.3		5.3	-2.6	13.8
	3		2.5	-3.5	8.8		-2.0	-9.2	5.7
PM2.5/PM10 every day	0	13.6	2.4	0.4	4.4	20.6	2.0	0.0	4.1
	1		3.9	1.9	6.0		5.7	3.5	7.8
	2		2.1	0.2	4.0		3.5	1.5	5.6
	3		0.1	-1.7	1.9		0.7	-1.3	2.7

Table 2. Excess risk for cardiovascular mortality (Central estimate and 95% Confidence Interval (CI) for interquartile range (IQR)); Bold = statistically significant at $p < 0.05$); #Stepwise regression model included traffic for potential selection